

DEPARTMENT OF CONSUMER & INDUSTRY SERVICES

DIRECTOR'S OFFICE

CONSTRUCTION SAFETY STANDARDS

Filed with the Secretary of State on June 23, 1992 (as amended September 3, 1996), (as amended April 11, 2000)

This rule takes effect 15 days after filing with the Secretary of State

(By authority conferred on the director of the department of consumer and industry services by sections 19 and 21 of Act No. 154 of the Public Acts of 1974, as amended, and Executive Reorganization Order No. 1996-2, being §§408.1019, 408.1021, and 445.2001 of the Michigan Compiled Laws)

R 408.43202, R 408.43205, R 408.43206, 408.43209 of the Michigan Administrative Code are amended as follows:

Visit our web site at: www.michigan.gov/miosha

PART 32. AERIAL WORK PLATFORMS

TABLE OF CONTENTS

Scope	R 408.43201	Inspection, maintenance and testing ...	R 408.43206
Equipment covered	R 408.43202	Permits; training	R 408.43207
Equipment not covered	R 408.43203	Preoperation procedures	R 408.43208
Definitions	R 408.43204	Operating procedures	R 408.43209
Construction	R 408.43205	Figures	R 408.43210

GENERAL PROVISIONS

R 408.43201. Scope.

Rule 3201. (1) These rules apply to the construction, operation, maintenance, and inspection of aerial work platforms with either manual or powered mobility.

(2) This part replaces the occupational safety and health administration safety and health regulations set forth in 29 C.F.R. 1910.67, which was adopted by reference in R 408.41001.

R 408.43202. Equipment covered.

Rule 3202. These rules apply to equipment that has a primary function of elevating personnel, together with their tools and necessary materials, on a platform which is mechanically positioned. The units covered are described by the following American national standards institute standards:

- (a) ANSI standard A92.2-1990, "Vehicle-Mounted Elevating Work Platforms", which is adopted by reference in these rules and which is available at a cost as of the time of adoption of these rules of \$68.00 from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado 80112, telephone number 1-800-854-7179, Web-site GLOBAL@IHS.COM. This standard is available for review at the Michigan Department of Consumer and Industry Services, Standards Division, State Secondary Complex, 7150 Harris Drive, Box 30643, Lansing, MI 48909. This standard applies to vehicle-mounted devices installed on commercial chassis and covers the following type of units (See figure 1):
 - (i) Extensible boom aerial devices.
 - (ii) Aerial ladders.
 - (iii) Articulating boom aerial devices.
 - (iv) Vertical towers.

- (v) A combination of any of the equipment specified in paragraphs (i) to (iv) of this subdivision.

- (b) ANSI standard A92.3-1990, "Manually Propelled Elevating Work Platforms", which is adopted by reference in these rules and which is available at a cost as of the time of adoption of these rules of \$68.00. This standard applies to work platforms which are manually propelled, which are vertically adjustable by manual or powered means, and which may be towed or manually moved horizontally on wheels or casters that are an integral part of the work platform base. (See figure 2).
- (c) ANSI standard A92.5-1992, "Boom-Supported Elevating Work Platforms", which is adopted by reference in these rules and which is available at a cost as of the time of adoption of these rules of \$68.00. This standard applies to all integral frame, boom-supported elevating work platforms which telescope, articulate, rotate, or extend beyond the base dimensions. (See figure 3).
- (d) ANSI standard A92.6-1999, "Self-Propelled Elevating Work Platforms", which is adopted by reference in these rules and which is available at a cost as of the time of adoption of these rules of \$68.00. This standard applies to self-propelled vertically adjustable integral chassis work platforms. Such work platforms are power-operated with primary controls for all movement operated from the platform. (See figure 4).

R 408.43203. Equipment not covered.

Rule 3203. (1) Equipment that has a primary function other than elevating personnel, such as fork trucks or cranes which are adapted to elevating personnel, is not covered by these rules.

(2) Also excluded from coverage of these rules is fire fighting equipment that is covered by the provisions of the publication entitled "American National Practices for the Maintenance, Care, Testing and Use of Fire Department Aerial Ladders and Elevating Platforms," ANSI/NFPA 1904-1975, which is, for the purpose of identifying equipment that is excluded from coverage of these rules, adopted by reference in these rules and which is available at a cost as of the time of adoption of these rules of \$11.50 from the American National Standards Institute, 11 West 42nd Street, New York, New York 10036, or from the Standards Division, Michigan Department of Consumer and Industry Services, Box 30643, Lansing, MI 48909.

R 408.43204. Definitions.

Rule 3204. (1) "Aerial device" or "aerial work platform" means an entire device that is designed and manufactured to raise personnel to an elevated work position on a platform supported by scissors, masts, or booms.

(2) "Aerial ladder" means an aerial device that consists of a single- or multiple-section rung ladder.

(3) "Articulating boom" means an aerial device that has two or more hinged boom sections.

(4) "Authorized person" means a person who is approved and assigned to perform specific types of duties by the employer and who is qualified to perform those duties because of his or her training or experience.

(5) "Commercial chassis" means a vehicle that is built for over-the-road (roadway) travel.

(6) "Extensible boom" means an aerial device, except for the aerial ladder-type, that has a telescopic boom.

(7) "Insulated aerial device" means an aerial work platform that is designed with dielectric components to meet specific electrical insulating ratings.

(8) "Mechanically positioned" means that the elevating assembly, whether a mechanical (cable or chain), hydraulic, pneumatic, electric or other powered mechanism, is used to raise or lower the platform.

(9) "Platform" means the portion of an aerial work platform, such as a bucket, basket, stand, cage, or the equivalent, that is designed to be occupied by personnel.

(10) "Qualified person" means a person who possesses a recognized degree, certificate, professional standing, or skill and who, by knowledge, training, and experience, has demonstrated the ability to deal with problems relating to the subject matter, the work, or the project.

(11) "Vertical tower" means an aerial device that is designed to operate vertically on a level surface.

R 408.43205. Construction.

Rule 3205. (1) Aerial work platforms shall be designed, constructed, and tested so as to be in compliance with the requirements of the following applicable American national standards institute standards:

- (a) ANSI standard A92.2-1990, "Vehicle-Mounted Elevating And Rotating Aerial Devices".
- (b) ANSI standard A92.3-1990, "Manually Propelled Elevating Work Platforms".
- (c) ANSI standard A92.5-1992, "Boom-Supported Elevating Work Platforms".
- (d) ANSI standard A92.6-1999, "Self-Propelled Elevating And Rotating Aerial Devices".

These standards are adopted by reference in R 408.43202.

(2) Aerial work platforms shall not be field-modified for uses other than those intended by the manufacturer, unless the modification has been certified in writing by the manufacturer or by any other equivalent entity, such as a nationally recognized testing laboratory, to be in

compliance with the applicable ANSI standard and this rule, and to be at least as safe as the equipment was before modification.

(3) Directional controls shall be in compliance with all of the following provisions:

- (a) Be of the type that will automatically return to the off or neutral position when released.
- (b) Be protected against inadvertent operation.
- (c) Be clearly marked as to their intended function.
- (d) An overriding control shall be provided in the platform which must be continuously activated for platform directional controls to be operational and which automatically returns to the off position when released.

(4) Aerial work platforms shall be equipped with emergency controls at ground level.

(5) Emergency ground level controls shall be clearly marked as to their intended function and be capable of overriding the platform controls.

(6) All of the following information shall be clearly marked in a permanent manner on each aerial work platform.

- (a) Special workings, cautions, or restrictions necessary for operation.
- (b) Rated work load.
- (c) A clear statement of whether or not the aerial work platform is electrically insulated.

(7) Rotating shafts, gears, and other moving parts that are exposed to contact shall be guarded as prescribed in general industry standard, Part 7. "Guards for Power Transmission", being R 408.10701 et seq. of the Michigan Administrative Code.

(8) Attachment points shall be provided for fall protection devices for personnel who occupy the platform on aerial work platforms described in the provisions of R 408.43202 (a) and (c). (See figures 1 and 3).

R 408.43206. Inspection, maintenance and testing.

Rule 3206. An employer shall comply with all of the following requirements:

- (a) Each aerial work platform shall be inspected, maintained, repaired, and kept in proper working condition in accordance with the manufacturer's or owner's operating or maintenance and repair manual or manuals.
- (b) Any aerial work platform found not to be in a safe operating condition shall be removed from service until repaired. All repairs shall be made by an authorized person in accordance with the manufacturer's or owner's operating or maintenance and repair manual or manuals.
- (c) If the aerial work platform is rated and used as an insulated aerial device, the electrical insulating components shall be tested for compliance with the rating of the aerial work platform in accordance with ANSI standard A92.2-1990, Section 6.

Such testing shall comply with all of the following provisions:

- (i) The test shall be performed not less than annually.
- (ii) Written, dated, and signed test reports shall be made available by the employer for examination by a department of consumer and industry services representative.
- (iii) The insulated portion of an aerial device shall not be altered in any manner that might reduce its insulating value.
- (d) All danger, caution, and control markings and operational plates shall be legible and not obscured.

R 408.43207. Permits; training.

Rule 3207. (1) An employer shall provide the operator of an aerial work platform with an aerial work platform permit.

(2) The requirements of subrule (8)(a), (b), (c), and (d) of this rule shall be met before an employee is issued a permit.

(3) A permit shall be carried by the operator or be available at the job site and shall be displayed upon request by a department of consumer and industry services representative.

(4) A permit shall indicate the type of aerial work platforms an operator has been trained on and is qualified to operate.

(5) A permit to operate an aerial work platform is valid only when performing work for the employer who issued the permit. A permit shall be issued for a period of not more than 3 years.

(6) A permit shall contain all of the following information (see sample permit):

- (a) Firm name.
- (b) Operator's name.
- (c) Name of issuing authority. (Authorized by)
- (d) The following types of aerial work platform the operator is authorized to operate:
 - (i) Vehicle-mounted elevating work platform such as:
 - (1) Extensible boom aerial devices.
 - (2) Aerial ladders.
 - (3) Actuating boom aerial devices.
 - (4) Vertical towers.
 - (ii) Manually propelled elevating work platforms.
 - (iii) Boom-supported elevating work platforms.
 - (iv) Self-propelled elevating work platforms.
- (e) Date issued.
- (f) Expiration date.
- (7) A sample permit is set forth as follows:

SAMPLE PERMIT			
AERIAL WORK PLATFORM PERMIT			
<i>(Firm Name)</i>			
_____ (Name)			
Type of aerial work platform to operate:			
Date Issued	Type	Authorized by	Expiration Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(8) An employer shall provide each employee who will operate the aerial work platform with instruction and training regarding the equipment before a permit is issued or reissued. Such instruction and training shall ensure that each operator is in compliance with the minimum following provisions:

- (a) Is instructed by a qualified person in the intended purpose and function of each of the controls.
- (b) Is trained by a qualified person or reads and understands the manufacturer's or owner's operating instructions and safety rules.
- (c) Understands by reading or by having a qualified person explain, all decals, warnings, and instructions displayed on the aerial work platform.
- (d) Reads and understands the provisions of this

subrule and subrules (1) to (7) and (9) of this rule or be trained by a qualified person on their content.

(9) The manufacturer's operating instructions and safety rules shall be provided and maintained in a legible manner on each unit by the employer.

R 408.43208. Preoperation procedures.

Rule 3208. (1) Before use on each work shift, an aerial work platform shall be given a visual inspection by the operator for defects that would affect its safe operation and use. The inspection shall consist of not less than both of the following procedures:

- (a) Visual inspection for all of the following:
 - (i) Cracked welds.
 - (ii) Bent or broken structural members.
 - (iii) Hydraulic or fuel leaks.
 - (iv) Damaged controls and cables.
 - (v) Loose wires.
 - (vi) Tire condition.
 - (vii) Fuel and hydraulic fluid levels.
 - (viii) Slippery conditions on the platform.
- (b) Operate all platform and ground controls to ensure that they perform their intended function.

(2) Before the aerial work platform is used, and during use on the job site, the operator shall inspect for all of the following:

- (a) Ditches.
- (b) Drop-offs.
- (c) Holes.
- (d) Bumps and floor obstructions.
- (e) Debris.
- (f) Overhead obstructions.
- (g) Power lines.
- (h) Similar conditions to those specified in subdivisions (a) to (g) of this subrule.

The area around the aerial work platform shall also be inspected to assure clearance for the platform and other parts of the unit.

(3) All unsafe items found as a result of the inspection of the aerial work platform or work area shall be corrected before further use of the aerial work platform.

(4) When the clearances specified in R 408.43209(2) cannot be maintained, the owner of electrical lines or his or her authorized representative shall be notified and provided with all pertinent information before the commencement of operations near electrical lines.

(5) Any overhead wire shall be considered to be an energized line until the owner of the line or his or her authorized representative states that it is de-energized.

R 408.43209. Operating procedures.

Rule 3209. (1) The aerial work platform shall be used only in accordance with the manufacturer's or owner's operating instructions and safety rules.

(2) The following clearances shall be maintained when operating aerial work platforms or other equipment under, over, by, or near energized electric power lines:

VOLTAGE	MINIMUM CLEARANCE
0 to 50 kV.	10 feet
More than 50 kV.	10 feet + .4 inch per kV.

(3) The clearance requirements set forth in subrule (2) of this rule do not apply to the following situations:

- (a) Where work is performed from an insulated aerial device that is insulated for the work and the work is performed in accordance with the provisions of construction safety standard Part 16. "Power Transmission and Distribution", being R 408.41601 et seq. of the Michigan Administrative Code, and

Part 30. "Telecommunications", being R 408.43001 et seq. of the Michigan Administrative Code.

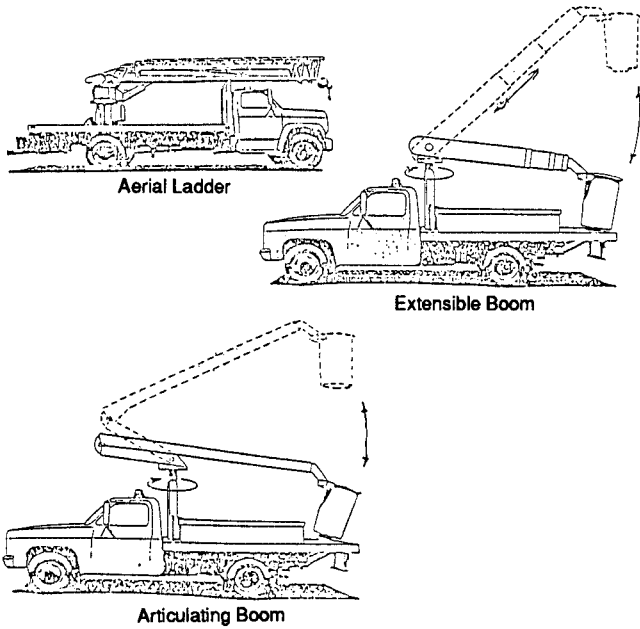
- (b) Where the electric power transmission or distribution lines have been de-energized and visibly grounded at the point of work or where insulating barriers that are not a part of an attachment to the aerial work platform have been erected to prevent physical contact with the line.
- (c) Where work is being performed by 2 licensed journeypersons electricians on equipment up to .5kV.
- (4) Two licensed journeypersons will be required for work within the minimum clearance on equipment over .5kV.
- (5) Proximity warning devices may be used, but shall not be used instead of meeting the requirements contained in subrules (2) and (3) of this rule.
- (6) The manufacturer's rated load capacity shall not be exceeded. The employer shall ensure that the load and its distribution on the platform are in accordance with the manufacturer's specifications. The aerial work platform rated load capacity shall not be exceeded when loads are transferred to the platform at elevated heights.
- (7) Only personnel, their tools, and necessary materials shall be on or in the platform.
- (8) The guardrail system of the platform shall not be used to support any of the following:
 - (a) Materials.
 - (b) Other work platforms.
 - (c) Employees.
- (9) Personnel shall maintain firm footing on the platform while working on the platform. The use of railings, planks, ladders, or any other devices on the platform for achieving additional height is prohibited.
- (10) Fuel gas cylinders shall not be carried on platforms that would allow the accumulation of gases.
- (11) A safety harness that has a lanyard which is in compliance with construction safety standard Part 45. "Fall Protection", being R 408.44501 et seq. of the Michigan Administrative Code, and which is affixed to attachment points provided and approved by the manufacturer shall be provided by the employer and used by any occupant of an aerial work platform described in the provisions of R 408.43202(a) and (c) and figures 1 and 3. A fall arrest system shall only be used where the aerial lift is designed to withstand the vertical and lateral loads caused by an arrested fall.
- (12) A body belt may be used with a restraint device with the lanyard and the anchor arranged so that the employee is not exposed to any fall distance. A restraint device is required where the aerial lift cannot withstand the vertical and lateral loads imposed by an arrested fall.
- (13) Belting off to an adjacent pole, structure, or equipment while working from an aerial work platform is prohibited.
- (14) An employer shall not allow employees to exit an elevated aerial work platform, except where elevated work areas are inaccessible or hazardous to reach. Employees may exit the platform with the knowledge and consent of the employer. When employees exit to unguarded work areas, fall protection shall be provided and used as required in construction safety standard Part 45. "Fall Protection", being R 408.44501 et seq. of the Michigan Administrative Code.
- (15) Only aerial work platforms that are equipped with a manufacturer's installed platform controls for horizontal movement shall be moved while in the elevated position.

- (16) Before and during driving while elevated, an operator of a platform shall do both of the following:
 - (a) Look in the direction of, and keep a clear view of, the path of travel and make sure that the path is firm and level.
 - (b) Maintain a safe distance from all of the following:
 - (i) Obstacles.
 - (ii) Debris.
 - (iii) Drop-offs.
 - (iv) Holes.
 - (v) Depressions.
 - (vi) Ramps.
 - (vii) Overhead obstructions.
 - (viii) Overhead electrical lines.
 - (ix) Other hazards to safe elevated travel.
- (17) Outriggers or stabilizers, when provided, are to be used in accordance with the manufacturer's instruction. Outriggers and stabilizers shall be positioned on pads or a solid surface.
- (18) Aerial work platforms shall be elevated only when on a firm and level surface or within the slope limits allowed by the manufacturer's instructions.
- (19) A vehicle-mounted aerial work platform (figure 1) shall have its brakes set before elevating the platform.
- (20) A vehicle-mounted aerial work platform (figure 1) shall have wheel chocks installed before using the unit on an incline.
- (21) Climbers shall not be worn while performing work from an aerial work platform.
- (22) Platform gates shall be closed while the platform is in an elevated position.
- (23) Stunt driving and horseplay are prohibited.
- (24) Altering, modifying, or disabling safety devices or interlocks is prohibited.
- (25) Care shall be taken by the employer to prevent ropes, cords, and hoses from becoming entangled in the aerial work platform.
- (26) A platform operator shall ensure that the area surrounding the aerial work platform is clear of personnel and equipment before lowering the platform.
- (27) Before and during travel, except as provided for horizontal movement in subrule (15) of this rule, an operator shall do all of the following:
 - (a) Inspect to see that booms, platforms, aerial ladders, or towers are properly cradled or secured.
 - (b) Ensure that outriggers are in a stored position.
 - (c) Limit travel speed according to the following factors:
 - (i) Condition of the surface.
 - (ii) Congestion.
 - (iii) Slope.
 - (iv) Location of personnel.
 - (v) Other hazards.
- (28) The aerial work platform shall not be positioned against another object to steady the platform.
- (29) The aerial work platform shall not be operated from a position on a truck, trailer, railway car, floating vessel, scaffold, or similar equipment.
- (30) The boom and platform of the aerial work platform shall not be used to move or jack the wheels off the ground unless the machine is designed for that purpose by the manufacturer.
- (31) If the platform or elevating assembly becomes caught, snagged, or otherwise prevented from normal motion by adjacent structures or other obstacles so that control reversal does not free the platform, all personnel shall be removed from the platform before attempts are made to free the platform.

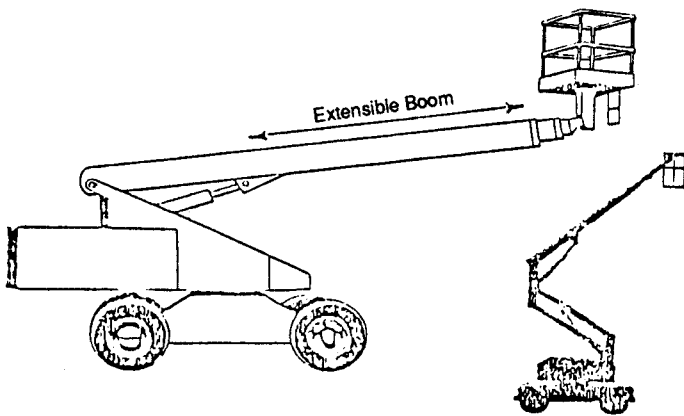
R 408.43210. Figures.

Rule 3210. Figures 1 to 4 are as follows:

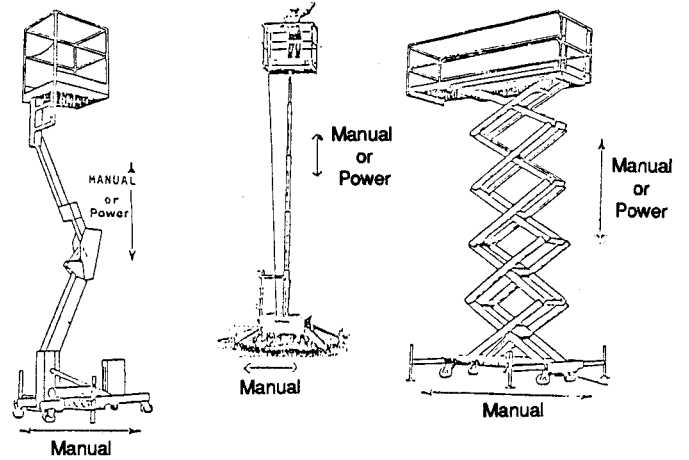
**FIGURE 1
VEHICLE-MOUNTED ELEVATING WORK PLATFORM**



**FIGURE 3
BOOM-SUPPORTED ELEVATING WORK PLATFORMS**



**FIGURE 2
MANUALLY PROPELLED ELEVATING WORK PLATFORMS**



**FIGURE 4
SELF-PROPELLED ELEVATING WORK PLATFORMS**

